

Date: Thu, 26 May 94 04:30:18 PDT
From: Ham-Equip Mailing List and Newsgroup <ham-equip@ucsd.edu>
Errors-To: Ham-Equip-Errors@UCSD.Edu
Reply-To: Ham-Equip@UCSD.Edu
Precedence: Bulk
Subject: Ham-Equip Digest V94 #160
To: Ham-Equip

Ham-Equip Digest Thu, 26 May 94 Volume 94 : Issue 160

Today's Topics:

Brushless motor or Servo Motor
Converting an old HT-220 to 2M (2 msgs)
GE Century 2 HELP needed
Motorola GPS engine purchase information
multimeters
TM-732A: Interesting Behavior
WANTED: Autopatch!!
yaesu ft 650 6,10,12 meter for sale

Send Replies or notes for publication to: <Ham-Equip@UCSD.Edu>
Send subscription requests to: <Ham-Equip-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Equip Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-equip".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 26 May 1994 20:25:37 +1000
From: munnari.oz.au!ariel.ucs.unimelb.EDU.AU!mchao@tcgould.tn.cornell.edu
Subject: Brushless motor or Servo Motor
To: ham-equip@ucsd.edu

Hi, netters,

Currently, I am looking for a small size motor for my research project. It is for
sheep sheering tool. The specifications of the motor are:

- 1) size : 35 mm in diameter and 100 mm long
- 2) speed : 2500-3000 rpm
- 3) output power : 200 w

Any contact of manufacturers or distributors will be appreciated.

Many thanks..

Ming Chao
Dept of Mech Eng,
Uni of Melb,
Australia

Date: Wed, 25 May 1994 20:33:49 GMT
From: ihnp4.ucsd.edu!swrinde!sgiblab!gatekeeper.us.oracle.com!oracle!unreliable!
bounce@network.ucsd.edu
Subject: Converting an old HT-220 to 2M
To: ham-equip@ucsd.edu

I have a Motorola Ht-220 Type CC3540 Serial # L06K2D Model H33FFN1100E.
It transmits and Receives on 163.5375 MHz. It has a 15 Volt NiCad. It is
crystal controlled. I would like to convert this to 2 meter. Does anyone
know how I can do this? I should be able to swap out crystals, shouldn't I?

The numbers on the crystals (as best as I can tell) are:

xmit: 18170.8
rcv: 48912.50

What do these numbers mean and how are they related to the transmit
and receive freqs? There is also a "PL Reed" that I will probably need. What
is this? Motorola wants \$90 I DON'T THINK SO!. I'd like to substitute with
something a little less pricey.

Last (and least?) I need a charger for the Ni-CAD. I'd like to build
it myself. Any plans out there?

I live in Columbus Ohio but I travel extensively. I will soon be in
the Detroit Michigan area, anyone up there that can help me? Please respond
via email as my access to news is erratic.

My email address is:
dmarsh@oracle.us.com

So many questions, so few answers.

Doug N8TUT

Date: Thu, 26 May 1994 05:48:01 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!csulb.edu!csus.edu!netcom.com!
wa2ise@network.ucsd.edu

Subject: Converting an old HT-220 to 2M
To: ham-equip@ucsd.edu

In article <1994May25.203349.11883@oracle.us.oracle.com>
usenet@oracle.us.oracle.com (Oracle News Poster) writes:

> I have a Motorola Ht-220 Type CC3540 Serial # L06K2D Model H33FFN1100E.
> It transmits and Receives on 163.5375 MHz. It has a 15 Volt NiCad. It is
> crystal controlled. I would like to convert this to 2 meter. Does anyone
> know how I can do this? I should be able to swap out crystals, shouldn't I?
> The numbers on the crystals (as best as I can tell) are:

>
> xmit: 18170.8
> rcv: 48912.50
>

these are the crystal freqs in KHz. the xmit crystal is 1/9th the xmit freq.

The receive crystal freq = (receive freq - 16.8MHz)/3 The 1st if is 16.8MHz.
2nd is 455KHz.

You'll have to tweak the front end receive LC circuits some, but don't touch
the IFs. And tweak all the xmit LCs. How to tell apart? You should get
the service manual. Mine refers to H23ff...., so yours may differ some.
You might need to add some tiny caps (both physically and in the pF range)
to get the LCs down from 163 to 146.

There is also a "PL Reed" that I will probably need. What
> is this? Motorola wants \$90 I DON'T THINK SO!. I'd like to substitute with
> something a little less pricey.
If the reed is "4A", it may be compatible with the local repeaters. or the
reed circuits could be removed, but there's some small change to make to
the squelch.

As for the NiCads, I wouldn't be surprised that they might be dead now.
I mean not chargeable anymore.

I've been using an HT220 board or my packet radio, crystalled on 145.07MHz.
Coupled with a small power amp stage to generate about 8Watts. It's been
going for 5 or more years in this service, and the friend who gave it to
me had it this way (different freq's for voice work) ten or more years
before. It just keeps on going.... We run it off a power supply, and
I'm using a J pole antenna.

Date: 26 May 1994 01:38:43 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!spool.mu.edu!torn!news.unb.ca!
nbt.nbnet.nb.ca!ve1fc.nbnet.nb.ca!ve1fc@network.ucsd.edu
Subject: GE Century 2 HELP needed

To: ham-equip@ucsd.edu

Have a couple of General Electric CENTURY 2 radios and need a manual and programming info.

The radios are modle SE56SSSG5319G3 16 CHAN SYNTHESIZED radios.

Would like to get em up and running.

If you can help please let me know.

THANKS

Graham Warrington

Date: Wed, 25 May 1994 22:43:34 GMT

From: ihnp4.ucsd.edu!swrinde!gatech!howland.reston.ans.net!newsserver.jvnc.net!
jvnc.net!brownell@network.ucsd.edu

Subject: Motorola GPS engine purchase information

To: ham-equip@ucsd.edu

bonomo@specxn.enet.dec.com () writes:

>Greetings, one and all!

>This message is ASCII text, formatted as <CR> at =<78 characters, tabs at +8.

>Have finally received "everything" which I will obtain from Motorola and
>Trimble, and the order requests have dwindled to a minimum, I have attached
>the specifications and pricing below.

>In a nutshell, the Motorola unit is better in every way, excepting three
>factors. The Trimble unit:

>1) is about 1/8" smaller in width and height,
>2) is about .6 ounce lighter,
>3) consumes less power in standby, quoted as ~2uA nominal, versus the
> Motorola's stated maximum of 60uA.

>Other than that, the Motorola VP Oncore engine is superior in all ways,
>including price. The recommendation, from my perspective, is to choose the
>Motorola unit, but your choice may vary. The above factors, in which the
>Trimble unit is superior, may be significant ones for you.

>I have had requests from 375 individuals, from nine countries, for over 435
>units. All this is, of course, based on a "\$150" purchase price, which is not
>available.

>Understanding this, it seems best if there is a "standard" configuration which

>is ordered, as the pricing given is for quantities of 100 and greater. If
>100+ want the options, we'll order those, too. Remember, all prices are for
>100+ units per item. In other words, if 25 units are wanted with the LNA
>option, the pricing for that LNA option will be somewhat higher than the
>figure quoted below, and I'm not sure if Motorola can (or will) handle
>one-sie, two-sies and get it right.

>*****
>The recommended "standard" configuration:

>Item	Price / each (includes Colorado State sales tax)
>-----	
>VP Oncore engine	\$268
>Active Antenna	\$ 70
>Cable to antenna	\$ 22
>	----
>Total "standard"	\$360

>*****

>Options to be considered:
>-----
>LNA \$ 16
>battery \$ 11

>Shipping within the continental U.S., via 2nd day service, will run \$10. This
>includes a box, packing foam and shipping charges. This figure is good for
>up to ten units.

>Those interested in this group purchase should remit monies to the name and
>address below. Please send non-cash such as personal checks, money orders or
>the like, as it allows records to be kept much more easily. If less than 100
>orders are placed, the checks/money orders will be destroyed, rather than
>incurring the cost of returning up to 100 of them. Alternately, if you want
>your check returned in the event of an insufficient number of units ordered,
>add a dollar bill to cover the cost of an envelope, stamp and my or my wife's
>writer's cramp which will inevitably result. If the order threshold is
>reached and an order is placed with Motorola, the \$1 will be returned to you
>with your order. Please include a very complete address to which the order
>may be sent. Include your current Internet address and telephone number(s)
>where you may be reached, as well. I've experienced several Inet addresses
>which have bounced, by the way, so if you didn't receive a response from me
>directly, it was attempted.

>Send orders to:

> Thomas A. Bonomo
> 8147D Summerset Drive
> Colorado Springs, Co. 80920.6123

>I can be reached, and have been by several individuals, at:

> Telephone: (719)593.9883 Home (evenings, weekends)
> (719)592.5105 Office (weekdays)
> Internet: tom.bonomo@cxo.mts.dec.com

>This message will be posted to the newsgroups, as well.

>Thanks for your patience as I've gathered information and responded to each of
>your requests.

>Regards,

>Tommy

>Specifications and pricing information follows.

>/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\

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>Motorola VP ONCORE SPECIFICATION DATA SHEET

>-----

>Receiver Architecture

>-----

- > o 6 channel
- > o L1 1575.42 MHz
- > o C/A code (1.023 Mhz chip rate)
- > o Code plus carrier tracking (carrier aided tracking)

>Tracking Capability

>-----

- > o 6 satellite vehicles simultaneously

>Dynamics

>-----

- > o Velocity:1000 m/s when altitude less than 18 km
- > o Altitude:18 km for velocities greater than 514 m/s

```
> o Accelleration: 4 g

>Antenna
>-----
> o accepts active and passive antennas

>Acquisition Time
>-----
>(TTFF = Time To First Fix)
> o 22 sec. typical TTFF (with current almanac, position, time and
> ephemeris)
> o 48 sec. typical TTFF (with current almanac, position and time)
> o 2.5 seconds typical re-acquire

>Accuracy
>-----
> o Position: less than 25 meters, SEP (without SA).
> DoD may invoke Selective Availability (SA), potentially
> degrading accuracy to 100 meters (2 dRMS)

>DATUMs
>-----
> o 49 std. datums, 2 user defined, default WGS-84

>Signal Level
>-----
> o TTL

>Output Messages
>-----
> o Latitude, longitude, height, velocity, heading, satellite
> tracking status (Motorola Binary Protocol)
> o NMEA-0183 Version 2.00 (GGA, RMC, GLL, GSA)
> o LORAN emulation mode
> o Software selectable

>Operating voltage
>-----
> o 4.75 - 5.25 VDC, 50 mVp-p ripple

>Operating current
>-----
> o 230 mA typical @5V, 275 mA max at 5.25V

>Standby voltage
>-----
> o 2.5 - 5.0 VDC
```

>Standby current

>-----

> o 60 ua max

>Dimensions

>-----

> o 2.00" x 3.25" x .64" (50.80mm x 82.55mm x 16.26mm)

>Weight

>-----

> o 1.9 oz. (53.9g)

>Connectors

>-----

> o Digital: 10 pin (2 x 5) header on .100" centers

> o RF: right angle OSX (sub-miniature snap-on)

>Operating Temperature

>-----

> o -30 - +85 degrees C (without on-board battery)

> o -20 - +60 degrees C (with on-board battery)

>Storage Temperature

>-----

> o -30 - +85 degrees C (without on-board battery)

> o -20 - +60 degrees C (with on-board battery)

>Humidity

>-----

> o 95% RH, non-condensing

>Vibration

>-----

> o 7.7 g, random (survivability)

>MTBF

>-----

> o >61,000 hours (estimated)

>Optional features

>-----

> o Lithium battery

> o Low Noise Amplifier

> o Real Time Clock

>Pricing (includes Colorado state sales tax)

>-----

>VP Oncore engine \$268
>Active Antenna \$ 70
>Cable to antenna \$ 22
>Low Noise Amp \$ 16
>Lithium Battery \$ 11

>Development Software
> 1st option \$270
> includes:
> Raw code phase,
> disc data,
> smooth sat time,
> carrier phase

> 2nd option \$215
> includes:
> above without
> carrier phase

>////////////////////////////////////

>

>////////////////////////////////////

>Specifications for Trimble SVeeSix GPS engine
>-----

> Model: SVeeSix-CM2

>General
>-----

> L1 Frequency, C/A code (SPS), 6 channel, continuous tracking receiver

>Update Rate
>-----

> NMEA - 1Hz

>Accuracy

>-----

> Position: 25m without SA
> Velocity: 0.1m/s without SA
> Time: 1 us (nom)

>DGPS Accuracy

>-----

> Position: 2m to 5m (2 sigma)
> Velocity: 0.1m/s
> Time: 1 us (nom)

>Acquisition (typ)

>-----

> Cold Start: 2 to 5 minutes
> Warm Start: 50 sec with time upload
> Hot start: 30 sec with time upload

>Reacquisition

>-----

> <2 sec

>Dynamics

>-----

> Velocity: 500 m/sec max
> Acceleration: 4g
> Jerk: 20m/sec^3

>Environmental Specs.

>-----

> Operating temp: -10C to +60C
> Storage temp: -55C to +100C
> Vibration: 0.008g^2/Hz 5Hz to 20Hz
> 0.05g^2/Hz 20Hz to 100Hz
> -3dB/octave 100Hz to 900Hz

> Operating Humidity: 5% to 95% RH non-condensing @+60C

> Altitude: -400m to +18000m

>Physical Characteristics

>-----

> Dimensions: 3.25" x 1.83" x 0.58"
> Weight: 1.3 oz. (36.4g)
> Connectors: RF: SMB, I/O: 8 pin (2x4), 2mm header

>Technical Specifications

>-----

> Prime power: +5Vdc (-3% to +5%)
> Power consumption: 280 ma, 1.40 watts
> Backup power: +3 to +5 Vdc
> Backup consumption: 1 uA @3V and +25C (nom)
> Serial port/1PPS: CMOS TTL
> Protocol options: TSIP @9600 baud, 8-0-1
> NMEA 0183 v2.0 @4800 baud, 8-N-1
> TAIP @4800 baud, 8-N-1

> NMEA messages: Standard: GGA, VTG
> Optional: GGA, GLL, VTG, ZDA, GSA, GSV, RMC

>Pricing (includes Colorado state tax)

>-----

> SVeeSix CM2, DGPS capable \$321
> Antenna (includes cable) \$118

>/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\

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Vern Brownell Work: vern.brownell@fi.gs.com
Voice: +1 212 902 3471 Home: brownell@tiger.jvnc.net

NN1R{/2, /6Y5}, NRA, '91 Vanagon Synchro Camper

Date: 25 May 94 21:26:04 GMT
From: news-mail-gateway@ucsd.edu
Subject: multimeters
To: ham-equip@ucsd.edu

I am fairly new to Ham Radio and am interested in doing more homebrew projects. The reason I am writing is to ask for info on a good multimeter that doesn't cost a great deal of money. How about RS for one?

I am still waiting for my ticket to come in the mail (took test 10.5 weeks ago), but to help pass the time and increase my knowledge in Amateur Radio I have been reading the 1994 Amateur Radio Handbook, Studying the question pools and getting my code to 13+ wpm to upgrade to Advanced.

Bren Doreck
bdoreck@beach.utmb.edu

Date: 26 May 1994 10:17:14 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!vixen.cso.uiuc.edu!
newsrelay.iastate.edu!news.iastate.edu!jdwhite@network.ucsd.edu
Subject: TM-732A: Interesting Behavior
To: ham-equip@ucsd.edu

In article <2rqgln\$1q4@oak.oakland.edu>,
prvalko <prvalko@vela.acs.oakland.edu> wrote:
>Yup... that's the "demo" mode of the 732a. I'm surprised you never
>heard of it! Kenwood even had them doing it at Dayton last year.
>
>73 paul wb8zjl

I've heard of it on the 74x series of radios, but not the 732. How does one get it into demo mode without tinkering inside the head unit?

-Jason

--
Jason D. White
jdwhite@iastate.edu
Iowa State University
Ames, Iowa
Durham Center Operations Staff
Repeater Chairman, Cyclone Amateur Radio Club
Packet: n0rwu @ ki0q.#cia.ia.usa.na

Date: 25 May 1994 15:15:03 -0700
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!europa.eng.gtefsd.com!
library.ucla.edu!news.mic.ucla.edu!unixg.ubc.ca!vertigo.helix.net!
vertigo.helix.net!not-for-mail@network.ucsd.edu

Subject: WANTED: Autopatch!!
To: ham-equip@ucsd.edu

In article <2ru589\$aed@search01.news.aol.com>,
BytesRUs <bytesrus@aol.com> wrote:

>Hello,

>

>I am looking for a relitivatily decent autopatch. I am also in need
>of a radio to control it, so if you are looking to sell either, than
>please send me some e-mail about it to BytesRUs@aol.com. Thanks!

>

>From,

>KE6GWW

Your lucky.. I just ran across some magazines today. There is some
schmatics for an "Autopatch Selector". This article is in Electronics
Now, November 1993. Go to the local library, they should have a
back-dated issue.

Have fun.

--

+-----+
Sean R. Oliver <soliver@vertigo.helix.net>
* PGP KEY BY FINGER OR PGP SERVERS *
+-----+

Date: Thu, 26 May 1994 06:30:09 GMT
From: ihnp4.ucsd.edu!swrinde!ringer!lonestar.utsa.edu!tjenn@network.ucsd.edu
Subject: yaesu ft 650 6,10,12 meter for sale
To: ham-equip@ucsd.edu

for sale ft650 6 meter
100 watt , box and docs.
like new
\$1100 or best offer

thanks
terrance
n5vzu

Date: Thu, 26 May 1994 08:34:53 GMT
From: ihnp4.ucsd.edu!swrinde!elroy.jpl.nasa.gov!lll-winken.llnl.gov!uop!csus.edu!
netcom.com!dgf@network.ucsd.edu

To: ham-equip@ucsd.edu

References <dgfCq9uGo.CH1@netcom.com>, <gregCqD2zJ.K6s@netcom.com>,
<2s035c\$dq4@oak.oakland.edu>csu

Subject : Re: Ten-Tec 1208 (6M) transverter kits - still 10 days away

In article <2s035c\$dq4@oak.oakland.edu> prvalko@vela.acs.oakland.edu (prvalko)
writes:

>They are not selling anything that is not available. They are taking
>orders for products we all KNOW are not available yet.

>

>paul

>

Quoted directly from the letter received 4/7/94 from Ten-Tec re my order:

"The shipping of this kit is delayed about 2 weeks because of a delay in
obtaining some of the parts."

/s/ customer sales

End of Ham-Equip Digest V94 #160
